

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) A Multilayer product made out of a substrate, and ~~at~~ at each side of the substrate is at least one cover layer; completely or partly covering the substrate, the substrate being a fibre reinforced thermoplastic product with randomly distributed fibres and with a density of less than 1.2 grams per cm³, preferably less than 1.0 grams per cm³, ~~and the~~ at least one cover layer being a long or continuous fibre reinforced thermoplastic product that bonds at a thermoplastic material of the substrate to form a single consolidation and in which with the continuous fibres are being orientated approximately parallel to one another within each balanced layer.
2. (Currently Amended) Multilayer product of claim 1, wherein with a the fibres of the substrate ~~with fibres having~~ an average length of between about 7 and 200 millimetres.
3. (Currently Amended) Multilayer product of claim 1, wherein with a the at least one cover layer ~~has long or continuous fibres~~ with an average length of at least 100 millimetres.
4. (Currently Amended) Multilayer product of claim 1, wherein the at least one with a cover layer ~~has with long or continuous fibres, which are each individually embedded in the a~~ thermoplastic material.
5. (Currently Amended) Multilayer product of claim 1 with a the thermoplastic material in of the substrate and a thermoplastic material in of the cover layer ~~which may be the same or different and that are both selected from the group consisting of is chosen among the following thermoplastic~~

~~materials:~~ polyolefins, polycarbonates, vinyl aromatic homopolymers, vinyl aromatic compounds containing copolymers, vinyl aromatic compounds containing graft copolymers or vinyl aromatic compounds containing blockcopolymers, thermoplastic polyesters, thermoplastic polyurethanes, polyetherimides[[;]], polyphenylene sulfide, polyphenylene ethers, polyamides ~~or~~ and blends of thermoplastic materials comprising at least one of the mentioned thermoplastic materials.

6. (Currently Amended) Multilayer product of claim 1, wherein with a the substrate with has a thickness of between 1.0 and 10.0 millimetres.

7. (Currently Amended) Multilayer ~~products-product~~ of claim 1, wherein with the at least one cover layers with has a thickness of between 0.1 and 5 millimetres.

8. (Currently Amended) Multilayer ~~products-product~~ of claim 1, wherein the thermoplastic material of the substrate and a thermoplastic material of the cover layer are compatible so as to bond together~~comprise compatible thermoplastic material~~.

9. (Currently Amended) Multilayer product of claim 1, wherein with on at least one cover layer is at each side of the substrate at least two cover layers, the fibres in the cover layer, the long fibres of at least two cover layers on each side of the substrate having at one side of the substrate having a different orientation of the long or continuous fibres relative to fibres in the cover layer at the other side of the substrate.

10. (Currently Amended) Multilayer product of claim 1, wherein with the fibres in the substrate, which have been selected out of the group consisting of~~made out of any of the following materials:~~ glass, carbon, synthetic materials, mineral and~~or~~ natural fibres.

11. (Currently Amended) Multilayer product of claim 1, wherein the ~~with long fibres in both the~~ substrate and the at least one cover layer, which have been selected out the group consisting of ~~made out of any of the following materials:~~ glass,; carbon,; synthetic materials, mineral ~~or~~ and natural fibres.

12. (Currently Amended) A P~~process for of the manufacturing of~~ a multilayer product, comprising the steps of:

~~by covering~~ a substrate at each side at least partly with at least one ~~film or prepreg~~ cover layer, the substrate being a fibre reinforced thermoplastic product with randomly distributed fibres and with a density of less than 1.2 grams per cm³ , preferably less than 1.0 grams per cm³ and the cover layer being a ~~long or~~ continuous fibre reinforced thermoplastic with the fibres being orientated approximately parallel to one another within each layer; and

consolidating the fibre reinforced thermoplastic product of the substrate at the fibre reinforced thermoplastic product of the cover layer.

13. (Currently Amended) Process of claim 12, further comprising ~~at least one additional a~~ step of heating the multilayer product covered with the at least one cover layers under pressure in a mould corresponding with ~~the a~~ desired shape of the multilayer product at a temperature above ~~the a~~ glass transition temperature of ~~the a~~ thermoplastic material in the consolidated substrate.

14. (Currently Amended) Process of claim 13, further comprising the step of ~~to heating~~ the consolidated substrate under pressure before applying the at least one cover layers.

15. (Currently Amended) ~~PA~~ painted multilayer product made out of a substrate, and at each side of the substrate is at least one cover layer, the substrate being a fibre reinforced thermoplastic product with randomly distributed fibres and with a density less than 1.2 grams per cm³, preferably less than 1.0 grams per cm³ and the at least one cover layer ~~or layers~~ being a long ~~or~~ continuous fibre reinforced thermoplastic product with the fibres being orientated approximately parallel to one another within each layer, wherein at least side of the multilayer product includes provided at least on one side with at least one paint layer, and wherein the fibre reinforced thermoplastic product of the substrate is consolidated to the fibre reinforced thermoplastic product of the at the least one cover layer.

16. (Currently Amended) Painted multilayer product of claim 15, further including with a primer layer between the at least one ~~outer~~ cover layer and the at least one paint layer ~~or layers~~.

17. (Currently Amended) ~~A P~~process for painting a multilayer product, comprising the steps of:
covering a consolidated substrate at each side at least partly with at least one ~~film or prepreg cover layer, made out of a substrate and at each side at least one cover layer,~~ the consolidated substrate being a glass fibre reinforced thermoplastic product with randomly distributed fibres ~~and with a density less than 1.2 grams per cm³, preferably less than 1.0 grams per cm³,~~ and the cover layer being a long ~~or continuous~~ fibre reinforced thermoplastic ~~plastic~~ film with the fibres being orientated approximately parallel to one another;

bonding the fibre reinforced thermoplastic product of the consolidated substrate at the fibre reinforced thermoplastic film of the at least one cover layer;

providing a primer at ~~by optionally providing the a surface of the at least one cover layer to be painted;~~ ~~by a primer and~~

~~by optionally~~ giving the surface of the cover layer to be painted a surface treatment followed by an application of at least one ~~one or more~~ paint layers.

18. (New) Multilayer product of claim 1, further comprising multiple cover layers and wherein the orientation of the continuous fibres in each adjacent cover layer is different so as to be considered isotropic;

wherein the fibre reinforced thermoplastic product includes glass fibres;

wherein in the product has a coefficient of thermal expansion that is very low;

wherein the product is shaped by heating and pressing the product or vacuum consolidating it in a mould having a desired shape; and

wherein the product has low density, great stiffness, good surface quality and is ideally suited for use as a body panel for vehicles.

19. (New) The process of claim 12, further comprising the steps of:

subjecting the substrate to a treatment under heat and pressure prior to the covering step;

applying multiple film layers with continuous fibres in an orientation such that each subsequent layer differs from the orientation of the previous layer and wherein this is at least one of a 0 degree lay-up, a 90 degree lay-up, a unidirectional isotropic lay-up, and a quasi isotropic lay-up;

heating the substrate and the film layers to assure good merging of the substrate and the layers; and

moulding the multilayer product into desired three dimensionally shaped forms by pressing or vacuum consolidating it in a properly shaped mould.

20. (New) The process of claim 17, further comprising the steps of:

treating the product with an intermediate surface flame treatment;
selecting the substrate material and the cover layer material so that they are merged together upon subjecting them to pressure and elevated temperatures;
preventing distortions of the mulitlayer product by applying on each side of the substrate the same number of films and with a balanced orientation.